

CLAIM AMENDMENTS

Claims 1 and 15 have been amended to include the limitations of Claim 8 with the exception that “sorbitan monooleate” and “sorbitan sesquioleate” have been removed as possible surfactants.

Claim 18 has been amended to include the limitations of Claims 19 and 8 with the exception that “sorbitan monooleate” and “sorbitan sesquioleate” have been removed as possible surfactants.

Claims 8 and 19 have been cancelled.

Claim 9 has been amended to remove the second “lignin” left after the first amendment.

Claim 12 has been amended to add a comma after “hydrocinnamic”.

Claim 16 has been amended to add the symbol “%” after “<0.05”.

Claim 20 has been amended to more clearly state the amount of ash producing metals that may be present in the lubricant additives that may be added to the oil. The phrase “add little to no ash forming metals to” has been removed and has been replaced with “used” and a “to provide” near the end of the sentence has been replaced with a “which provide”. The phrase now reads “wherein the lubricant additives used provide <0.5% sulfur or phosphorus compounds which provide <0.05 % phosphorus to the engine oil”.

CLAIM OBJECTIONS

In view of the amendment made to claims 9, 12 and 16 discussed above, the Examiner's objections to informalities for such claims are obviated.

CLAIM REJECTIONS

The Examiner has rejected claims 1-9, 11-17, 19 and 21 under 35 U.S.C. 112, second paragraph. The specific rejections are on claims 1, 15, 19, and 20 where all other rejected claims depend on one of these four. Applicants have amended the rejected claims as discussed in the Claim Amendments section above. In view of Applicants amendments, Applicants submit that all claims meet the requirements of 35 U.S.C. 112, second paragraph. Therefore Applicants request the Examiner to remove the 35 U.S.C. 112, second paragraph rejection.

U.S.C. 102(c) Rejections

The Examiner has rejected claims 1-7, 9, 11, 13-15 and 17-21 as being unpatentable in view of Duncan et al. (US 6,748,905). Applicants respectfully traverse.

Applicants hereby state that this patent application and the above identified reference have been and are commonly owned at the time of the invention and when the application was made. The application and Duncan are assigned to The Lubrizol Corporation. Therefore, this precludes a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case and under 35 U.S.C.102(f) or (g) or (e). Further, Applicants have filed a terminal disclaimer in compliance with 37 C.F.R. 1.321(c) to overcome an actual or provisional rejection that the patent application as is shown to be commonly owned with this application. Accordingly, this rejection should be removed.

U.S.C. 103 Rejections

The Examiner has rejected claim 8 as being unpatentable over Duncan et al. (US 6,748,905) in view of Marelli (US 6,211,253).

The Examiner has also rejected claims 12 and 16 as being unpatentable over Duncan et al. (US 6,748,905) in view of Carrick, et al (US 6,583,092).

Due to the terminal disclaimer filed in regards to Duncan, rejections under 35 U.S.C. 103(a) based upon the commonly assigned case and under 35 U.S.C.102(f) or (g) or (e) are precluded. Accordingly, the rejections made under 103(a) using Duncan should be removed.

The Examiner has rejected claims 1-7, 9 and 11-21 of the present invention under 35 U.S.C. 103(a) over WO 01/97952 in view of WO 02/24842 or Carrick et al. (US 6,583,092).

WO 01/97952 discloses a process for reducing the level of pollutants from an exhaust of a diesel engine by using a water diesel-fuel emulsion and the exhaust having a particulate filter. In contrast the present invention requires a lubricant with an ash content of less than one weight percent. WO 01/97952 does not teach, suggest or disclose Applicant's claimed lubricant with an ash content of less than one weight percent.

WO 02/24842 discloses a low sulphur consumable lubricating oil composition with a sulphur content of 5 to 250 ppm that further contains a nitrogen containing compound and the absence of an extreme-pressure additive comprised of a metal or phosphorus. In contrast the present invention requires an emulsified fuel and a lubricant with an ash content of less than one weight percent. WO 02/24842 does not teach, suggest or disclose Applicant's claimed emulsified fuel or a lubricant with an ash content of less than one weight percent.

Carrick discloses lubricating oil compositions derived from synthetic base oil of Groups I-V, an ashless dispersant such as a carboxylic or amine dispersant, an antioxidant and detergents. The oil has a phosphorus content of up to 0.01 %, a sulphur content of up to 0.25 % and up to 1.2 % ash. Carrick does not teach, suggest or disclose an emulsified fuel suitable for a combustion engine as claimed by Applicant in the present invention or the use of an emulsified fuel with the types of lubricants Applicant claims.

None of these references describe, suggest or teach the emulsifier required for the fuel in the present invention or the combination of the emulsified fuels with the types of low ash lubricants claimed by Applicant for the purpose of reducing emissions from an internal combustion engine. In contrast, the present invention claims an emulsifier that must be used as well as describing the combination of the emulsified fuel produced using the emulsifier with a lubricant having an ash content of less than one weight percent.

Furthermore, the Examiner stated in paragraph 15 of the office action mailed on 12/8/05 that the difference between WO 01/97952 in view of either WO 02/24842 or Carrick and the present invention is in the requirement in the claims of specific emulsifier. To that end, Applicants have amended claims 1, 15 and 18.

Claims 1 and 15 have been amended to incorporate the limitations on the emulsifier of Claim 8, a claim not rejected under these combinations of references. Claim 18 has been amended to incorporate the limitations of Claims 19 and 8. Claims 2-7, 9, 11-14, 16, 17, 20 and 21 each depend on one of the amended claims. Therefore, the 103(a) rejections of claims 1-7, 9 and 11-21 based on WO 01/97952 in view of either WO 02/24842 or Carrick should be

removed in view of Applicant's foregoing remarks, the amendments to claims 1, 15 and 18 and the cancellation of claims 8 and 19. Accordingly, this rejection should be removed.

The Examiner has rejected Claim 8 under 35 U.S.C. 103(a) over WO 01/97952 in view of either WO 02/24842 or Carrick (US 6,583,092) as applied to claim 1-7 and 9-20 and further in view of Marelli (US 6,211,253).

As Claim 8 has been cancelled, this rejection is moot, though Applicants assume that the Examiner will consider using the same rejection against the currently amended claims 1, 15 and 19. Based on this assumption, Applicants provide the following arguments:

As stated above, WO 01/97952, WO 02/24842 and Carrick do not describe, suggest or teach the emulsifier required for the fuel in the present invention or the combination of the emulsified fuels with the types of low ash lubricants described in the application for the purpose of reducing emissions from an internal combustion engine.

Marelli (US 6,211,253) discloses a process for producing stable emulsions of at least two substantially immiscible fluids by using an emulsification chamber with an injection system designed to create a specific angle at which the two inlet streams mix. Marelli focuses on the design of the chamber and the control of the mixing it provides in order to produce emulsions that are more stable. Marelli notes, in column 13, that the use of surfactants is to improve the stability of the emulsions produced, and then adds that if possible, these surfactants are chosen to minimize the surfactants' environmental impact. Marelli refers to the combustion products of the surfactants as well as the corrosiveness of the surfactants when discussing the selection of the surfactants and listing examples of surfactants that might be used.

In contrast, the present invention claims an emulsifier that must be used as well as claiming the combination of the emulsified fuel produced using the emulsifier with a lubricant having an ash content of less than one weight percent that reduces the emissions of an engine operating with these components. In other words, the selection of the surfactant in the present invention is based on producing an emulsified fuel that, in combination with the low ash lubricant, allows an engine to operate with reduced pollution and decreased engine wear. Therefore, the combination of Marelli with the references described above do not make the present invention obvious as none of the combinations include all of the limitations of the present invention in regard to the surfactants used.

Furthermore, in column 13, Marelli lists, among others, sorbitan monooleate and sorbitan sesquioleate as possible surfactants, which have been included to this point in Claim 8 of the present invention. Claim 8 is cancelled by this preliminary amendment but the limitations of Claim 8 have been incorporated into amended Claims 1, 15 and 19. Claims 1, 15, and 19 have also been amended to remove sorbitan monooleate and sorbitan sesquioleate as possible surfactants. Therefore, the arguments and amendments described above, show that Marelli, in combination with either WO 01/97952 and WO 02/24842 or WO 01/97952 and Carrick, does not make the present invention obvious. No rejections under 103(a) should be made against Claims 1, 15 and 19, based on these references.


In addition, as none of the references discussed describe, suggest or teach Applicant's claimed emulsifier and as there is no motivation to combine the references to reach Applicant's invention, there is no basis for a 103(a) rejection based on these references.

Should the Examiner have any questions or believe that a telephone conference would expedite the prosecution of this application; she is requested to call the undersigned attorney at 440-347-5072.

If any fees are due, the Commissioner is authorised to charge such fee to The Lubrizol Corporation Deposit Account No. 12-2275.

Respectfully submitted,

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